

Isolated Cysticercosis Cellulosae of Sternocleidomastoid Muscle: A Case Report with Review of Literature

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Abstract Human cysticercosis is an infection by the larval stage of the tapeworm. We encountered a rare case of isolated cysticercosis of sternocleidomastoid muscle in a 25 year old female. She presented with 2.5×1.5 cm firm, dull aching swelling with ill defined margins in right upper part of neck. It appeared to arise in sternocleidomastoid muscle. The diagnosis was established by FNAC, USG and CT scan. Patient was admitted and started on medical treatment. There was complete resolution of symptoms and patient improved to normal after 1 month of therapy with albendazole. The case is reported because it is a rare one and to reinforce the fact that parasitic etiology should be kept in mind while dealing with a case of neck swelling.

Keywords Cysticercosis cellulosae · Muscle · Neck

Introduction

Cysticercosis is caused by the larval form of the pork tapeworm *taenia solium*. Most often, it involves CNS, eyes and subcutaneous tissue. Head & Neck is a rare location for lodgement of cysticercosis larva. We encountered one such rare case of isolated cysticercosis cellulosae of sternocleidomastoid muscle in a 26 year old female presenting as neck swelling for last 3 months. The details of the clinical features, radiology, aspiration cytology and treatment are discussed with the review of literature.

Case Report

A 25 year old female presented in ENT outpatient department of this hospital with complaints of gradually progressive swelling in right side of neck in infra auricular region for last 3 months. She was also complaining of dull aching pain in swelling for last 15 days. It started with a pea sized swelling 3 months back when the patient first noticed it and gradually increased to the present size. There was no history of pain in throat, difficulty in swallowing, nasal obstruction, epistaxis, fever, headache, unconsciousness, and anosmia. There was no history of similar disease and tuberculosis in her family.

Clinical examination showed 2.5×1.5 cm firm, tender swelling with ill defined margins. It was free from the skin surface. There was no evidence of erythema on the overlying skin, however it was associated with swelling in upper part of neck. It could not be differentiated from sternocleidomastoid muscle. The examination of ear, nose and throat was normal. X ray Chest was normal.

On the basis of history and examination findings, the differential diagnosis was made. Tuberculosis of neck

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node, chronic suppurative lymphadenitis and secondaries in neck were kept as a possibility. The patient was advised for Blood counts, USG neck, FNAC and CT scan neck. Presumptive treatment was started with cap amoxicillin 500 mg QID (keeping infection as a possibility) and tab serratiopeptidase 10 mg BD to reduce oedema in upper part of neck, analgesics and antipyretics.

The patient came back after 4 days with investigation reports and reported some relief in pain. However there was no change in the size of the swelling. Examination of blood was normal except for eosinophilia.

USG (Fig. 1) showed two hypoechoic lesions with eccentric hyperechoic foci suggestive of nidi measuring 18 × 7 mm and 10 × 9 mm in right sternocleidomastoid muscle. Right sternocleidomastoid muscle showed diffuse decreased echogenicity suggestive of oedema. CECT neck showed diffuse decreased attenuation of right sternocleidomastoid muscle suggestive of oedema with evidence of two ill defined hypodense lesions within it (Fig. 2).

The smears prepared (FNAC) revealed the characteristic cytomorphology of the parasitic tegument (Fig. 3) and parenchyma along with a polymorphic inflammatory reaction consisting of palisading histiocytes, lymphocytes, eosinophils, macrophages and neutrophils. Occasional giant cells were also seen. No hooklets or scolices were seen. A diagnosis of cysticercosis was given.

With USG, CT scan and FNAC suggesting a diagnosis of cysticercosis, the patient was further inquired about her dietary history and any other swelling in her body. She was a vegetarian and there was no history of co existent swelling in her body. The patient was referred for ophthalmic and neurology check up to evaluate for any foci of

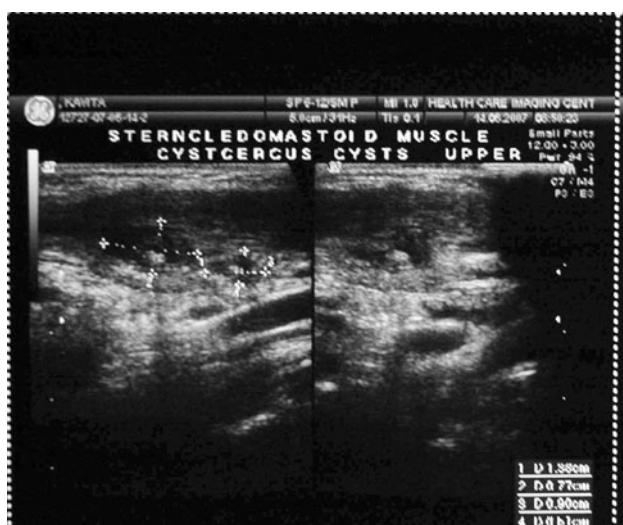


Fig. 1 USG neck showing two hypoechoic lesions (18 × 7 mm, 10 × 9 mm) with eccentric hyperechoic foci suggestive of nidi in right sternocleidomastoid muscle



Fig. 2 CECT neck showing two ill defined hypodense lesions (suggestive of nidi) and decreased attenuation (suggestive of oedema) in right sternocleidomastoid muscle

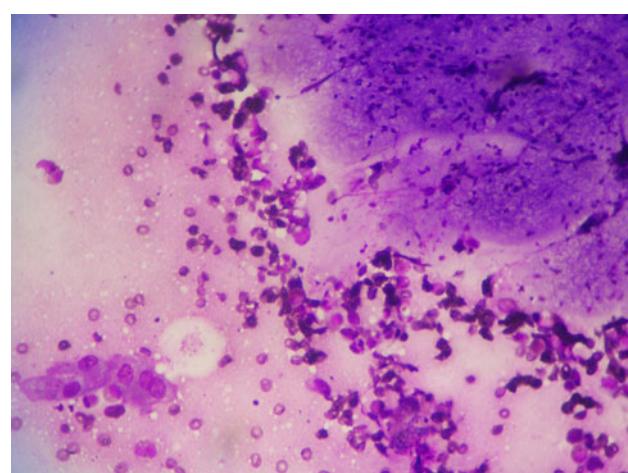


Fig. 3 Microphotograph showing part of the tegument of parasite (Cysticercosis) and palisading histiocytes in the background of RBC's (Leishman stain, $\times 400$)

cysticercosis. It was reported as normal. CECT Head was done to see whether there was also co existing neurocysticercosis. However the CECT was found to be normal.

A diagnosis of isolated cysticercosis cellulosae of sternocleidomastoid muscle was made and patient was admitted and started on Tab Albendazole 400 mg BD for 30 days. Steroids were added to reduce the swelling as treatment with albendazole provokes inflammatory response around dying cysticerci. Serratiopeptidase was added to reduce oedema in upper part of neck. During first week of treatment she complained of nausea, headache and

pain in swelling. The patient showed dramatic improvement in symptoms and was discharged on 14th day when the size of swelling reduced to 1×1 cm. Patient was kept in weekly follow up and tab albendazole was continued for 1 month.

After 1 month, USG showed mild edema in upper part of right sternocleidomastoid muscle and complete resolution of cystic lesion. CT scan showed mildly oedematous right sternocleidomastoid muscle and no evidence of any hypodense lesion within it suggesting complete resolution of the swelling. At 3 month and 6 month follow up, there was no evidence of recurrence or residual disease.

Discussion

Cysticercosis refers to the parasitic infestation by the larval stage of *T. solium*. It occurs when man is infested by the larva of *T. solium*, acting as intermediate host, instead definitive. It results from the ingestion of tapeworm eggs through contaminated food and water or dirty hands or eating undercooked meat (pork). Interestingly, review of literature suggests that most of these cases are reported from developing countries where the standard of health and hygiene is poor. Prabhu [1] reported high incidence of cysticercosis in countries like Brazil, Chile, Ecuador, South Africa and India.

The most common location for the lodgement of cysticercus larva are subcutaneous tissue, brain, and muscles [2]. Other less common locations are heart, liver, lung and peritoneum [2]. Muscle involvement is also common although it is usually remain asymptomatic. Most of the cysts remain viable for 5–10 years and then starts degenerating, followed by vigorous host response. At this stage, patient complains of symptoms depending on the site of involvement. The natural history of cyst is to resolve by complete resorption or calcification.

Of the muscular cysticercosis, skeletal muscles [3] are commonly involved. When skeletal muscles are involved, palpable cysticerci appear in the subcutaneous tissue. It can cause myositis and thus appears as a painful swelling. During acute stage of disease patient may present with fever, swelling and muscle tenderness.

Head and neck (excluding orbital and neurocysticercosis) is an uncommon location for cysticercosis. The review of literature showed cysticercosis of tongue [4], masseter [4], lower lip [5], soft palate [5], and sternocleidomastoid muscle [6].

Majority of the case reports suggests that muscular cysticercosis presents as a painless swelling [5] however few reports suggests that it can be painful, possibly due to myositis, or in active stage as in our case.

Brown et al. [6] suggested histopathology as the only reliable method for confirming the diagnosis of cysticercosis. Biopsy was not done in our case as FNAC report suggested the diagnosis.

Plain X ray has no role except in chronic cases with calcification. High resolution sonography is considered pathognomonic of cysticercosis and a definitive diagnosis can be made with greater confidence [7]. Vijayaraghavan [7] described four different sonographic appearances of muscular cysticercosis starting from cysticercosis cyst with inflammatory mass around it, irregular cyst with minimal fluid on one side, eccentric scolex in the cyst with large irregular collection in adjoining muscle fibres and a calcified cysticercosis. In our case, high resolution sonogram helped in establishing the diagnosis.

CT and MRI [5] helps in showing their location, number and relationship to surrounding structures. Sekhar and Honavar [8] suggested that CT and USG are equally effective in identifying the cyst and the scolex.

Considering the possibility of host response it is always advisable to start treatment after admission. Praziquantel (50 mg/kg/day) and albendazole (15 mg/kg/day) are the drug of choice for treatment of cysticercosis. Both these drugs are almost equally effective. The patient in our case was treated with albendazole. The duration of treatment must be 4 weeks. The side effects like fever, headache, nausea, vomiting and dizziness are reported with these medicines possibly due to inflammatory reaction produced by the host in response to massive destruction of cysticerci [9].

Sekhar and Honavar [8] suggested combination of oral albendazole and prednisolone in the management of myo-cysticercosis. They further concluded that serial USG is a useful tool in studying the temporal sequence of therapeutic response. Serial USG done in our case showed regression in size of swelling. Takayanagui and Chimelli [9] suggested the use of high doses of dexamethasone to prevent the deleterious host inflammatory host response.

Surgery does not have much role in muscular cysticercosis as most of the lesions are asymptomatic and symptomatic lesions heal by medical treatment. However cases like cysticercosis of eyes and neurocysticercosis may require surgery.

Prevention

Cysticercosis is a preventable disease. Health programmes to spread awareness about personal hygiene in general population can help in reducing the number of cases seen in clinical practice. Besides this, spreading awareness about the disease, its complication will actually make general population understand the importance of basic hygiene and

washing all raw vegetables thoroughly. Another important cause of disease is eating undercooked pork. Once a case is reported, all family members should be investigated.

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